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PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT ON THE BASIS OF GENERAL ASSEMBLY RESOLUTION 44/228 AND TAKING INTO ACCOUNT OTHER RELEVANT GENERAL ASSEMBLY RESOLUTIONS: CROSS-SECTORAL ISSUES

Education, public awareness and training

(Section IV, Chapter 4 of Agenda 21)

Report of the Secretary-General of the Conference

I. INTRODUCTION

1. This text has been prepared in response to Preparatory Committee decision 3/8 (see A/46/48 (Part II), annex I) and takes into account the Chairman's summary of the discussion. Documents A/CONF.151/PC/21 and A/CONF.151/PC/55 were used as a basis for developing the proposals. The original mandate for this area is contained in General Assembly resolution 44/228, section I, paragraph 15 (s): "To promote environmental education, especially of the younger generation, as well as other measures to increase awareness of the value of the environment".

2. Education, raising of public awareness and training are linked to virtually all areas in Agenda 21, and even more closely to the ones on meeting basic needs, capacity building, data and information, science, and the role of

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* See A/CONF.151/PC/96.

major groups. This chapter sets out broad proposals, while specific suggestions related to sectoral issues are contained in other chapters.

3. Programme areas described in the present chapter are:

(a) Reorienting education towards sustainable development;

(b) Increasing public awareness;

(c) Promoting training.

II. REORIENTING EDUCATION TOWARDS SUSTAINABLE DEVELOPMENT

Basis for action

4. Education is critical for promoting sustainable development and improving the capacity of countries to address environment and development issues. While basic education provides the underpinning for any environmental and development education, 1/ the latter needs to be recognized as an essential part of learning, including basic learning. It is indispensable for enabling people to adapt to a changing world. It is also critical for achieving ethical awareness and promoting behaviour consistent with the sustainable use of natural resources and sustainable development. To be effective, it should deal with both the dynamics of the physical/biological environment and human development, be integrated in all disciplines, and employ all formal and non-formal methods and adequate means of communication.

Objectives

5. The following objectives are proposed:

(a) By the year 2000, to ensure universal access to basic education, and to achieve primary education for at least 80 per cent of primary school-age children through formal schooling or non-formal education. To reduce the adult illiteracy rate to at least half of its 1990 level;

(b) To achieve environmental and development literacy, by 2000, of all sectors of society on a world-wide scale so that it becomes an essential and examinable part of the education of every student and a career incentive;

(c) To ensure by the end of this century the accessibility of environmental and development education, linked to social education, from primary school age to adulthood, as a lifelong experience, to all groups of people;

(d) To achieve an integrated approach to all environmental educational programmes, which encompasses the analysis of the local context of major environmental and development issues, drawing on the best available scientific evidence, identifying target audiences and methodologies and evaluating the results obtained.

Activities

6. All Governments should affirm or reaffirm their adherence to the World Declaration on Education for All adopted at the World Conference on Education for All: Meeting Basic Learning Needs (Jomtien, Thailand, 5-9 March 1990), and to its Framework for Action. This would encompass the preparation of national strategies and actions for meeting basic learning needs, universalizing access and promoting equity, broadening the means and scope of education, developing a supporting policy context, mobilizing resources and strengthening international cooperation to redress existing economic disparities which interfere with these aims.

7. Governments should prepare or update national strategies for environmental and development education within the next three years, which should set out policies and activities, identify needs, cost, means and schedules for their implementation, evaluation and review. A thorough review of curricula should be undertaken to ensure a multidisciplinary approach, with environment and development issues and their socio-cultural aspects and linkages integrated in all subjects and presented in a scientifically sound perspective.

8. Governments should set up advisory national environmental education coordinating bodies or round tables representative of various environmental, developmental, educational, gender and other interests, including non-governmental organizations, to encourage partnerships, help mobilize resources, and provide a source of information and focal point for international ties. These bodies would analyse the needs of national target audiences and non-specialist user groups, with special emphasis on decision makers, and establish means of effectively reaching them.

9. National educational authorities should assist or set up pre-service and in-service training programmes for all schoolteachers, administrators, and educational planners, as part of national and regional strategies, addressing the nature and methods of environmental and development education and making full use of relevant experience of non-governmental organizations.

10. National authorities should ensure that every school is assisted in designing environmental activity work plans, with the participation of students and staff, subject to regular audit. Schools should involve schoolchildren in local and regional ecosystems studies and in relevant activities, linking these with services and research in national parks, wildlife reserves, ecological heritage sites, etc. 2/

11. National and regional authorities and non-governmental organizations should promote the development of innovative interactive teaching methods in school classrooms, through distance learning, student to student teaching, electronic simulation computerized programmes, video, music, theatre, traditional media and other means.

12. The United Nations system should undertake a comprehensive review of its educational activities, encompassing training and public awareness,

reassessing priorities and reallocating resources, to ensure a coordinated environment and development education policy. With the International Environmental Education Programme (IEEP) continuing to provide the philosophy and lead, UNESCO and UNEP should set up within two years a programme to integrate the decisions of the Conference into the existing framework adapted to the needs of educators at different levels and circumstances. Regional organizations and national authorities should be assisted to elaborate parallel programmes within three to five years, in particular by conducting an analysis of target audiences and means of reaching them effectively. Studies and workshops should be undertaken to foster environmental ethics for different target groups in socio-cultural contexts.

13. UNESCO and UNEP with support from the International Union for the Conservation of Nature and Natural Resources (IUCN) should establish an international clearing-house of information, technologies and resources relevant to environmental and development education and public awareness within five years, in collaboration with the regional development banks, regional commissions, UNDP resident representatives, United Nations information centres, non-governmental organizations, data banks, and publishing houses. Regional clearing-houses could also be created. Developing countries should be assisted in preparing educational tools that expand on regional environment and development issues and initiatives, using learning materials and resources suited to their own requirements. The United Nations should improve the dissemination of existing materials, such as teaching modules, through the use of regional facilities and in a variety of languages. 3/

14. Governments and educational authorities should support university and other tertiary activities and networks for environmental and development education. Cross-disciplinary courses should be taken by all students likely to work in professions which impact upon the environment. Existing regional networks and activities and national university actions which promote research and common teaching approaches on sustainable development should be built upon, and new partnerships and bridges created with the business and other independent sectors, as well as with developing countries for technology, know-how and knowledge transfer. 4/

15. Governments, assisted by international organizations, should strengthen or establish national or regional centres of environmental and development excellence in interdisciplinary research and education in environmental sciences, law and the management of specific environmental problems - universities or existing networks in each country or region, promoting cooperative research and information sharing and dissemination. At the global level these functions should be performed by institutions such as the United Nations University, the International Academy of the Environment in Geneva and the proposed UNEP world environment academy.

16. Promotion of non-formal education activities at the regional and national level: the United Nations system through the UNESCO/UNEP IEEP should encourage the development of an international network to cooperate with non-governmental organizations for the achievement of global educational aims,

in order to forge stronger links with business, industry, labour unions, indigenous people, women, religious and other groups. 5/ At the national and local level, public and scholastic forums should be established for the discussion of environmental issues, suggesting alternatives to policy makers.

17. Educational authorities and non-governmental organizations should promote all kinds of adult education programmes for continuing education in environment and development, basing activities around elementary/secondary schools and local problems. These authorities and industry should encourage business and industrial and agricultural schools to include such topics in their curricula.

18. Governments and educational authorities should provide more opportunities for women by redressing gender stereotyping in the national curricula, improving enrolment opportunities, including them in advanced programmes as students and instructors, reforming entrance and teacher staffing policies and providing incentives by establishing child care facilities. Priority should be given to educating of young females. 6/

19. Governments should affirm the rights of indigenous peoples, by legislation if necessary, to use their experience and understanding of environmental determinants to play a part in education and training related to them and others. 7/

20. The United Nations should maintain a monitoring and evaluative role regarding decisions of the Conference on education and awareness, through a biennial register of national needs and progress. With Governments and non-governmental organizations it should present and disseminate decisions in a variety of forms, and ensure the continuous implementation and review of the educational implications of Conference decisions, in particular through relevant events and conferences. 8/

Means of implementation 9/

21. Total financing required for basic education is $7 to $8 billion per annum, of which $3 to $4 billion is needed from the international community. For environmental and development education total costs are around $1 billion including about $500 million to be obtained from the international community; $10 million would be required for strengthening international institutions.

III. INCREASING PUBLIC AWARENESS

Basis for action

22. There is still a considerable lack of awareness of the interrelated nature of all human activities and the environment, due to inaccurate or insufficient information, access, targeting, or use of the modern communication and media potential. Developing countries in particular lack relevant technologies and expertise. There is a need to increase public

sensitivity to environment and development problems, a sense of personal responsibility and involvement in their solution, especially at the local and grass-roots level, and greater motivation and commitment towards environmental quality.

Objective

23. The following objective is proposed: to establish a broad public awareness campaign as an essential part of a global education effort to strengthen attitudes and values rewarding environmental competence, sustainable consumption patterns and lifestyles, and leading to positive action.

Activities

24. Governments should establish national focal points or small coordination units at high levels to act as catalysts and clearing-houses for public environment and development information, and to coordinate activities with, among others, the United Nations, non-governmental organizations and media. They should encourage public awareness involvement and engage all layers of the national administration in a discussion of environmental policies and assessments, with parliamentary and public policy hearings providing a useful role.

25. The United Nations system should improve its channels of outreach in the course of a review of its education and public awareness activities to promote greater involvement and coordination of all parts of the system, especially its information bodies and regional and country operations. Systematic surveys of the impact of awareness campaigns should be conducted.

26. Governments and regional organizations should provide public environmental information services, centrally and locally, support data banks and encourage openness, information sharing, accessibility and rapid communication of accurate updated information for raising the awareness of all groups, particularly decision makers and the private sector. Multi-authored popular synthesis educational materials in easily understandable forms. Specialized interpretation and dissemination services set up, using the UNDP Sustainable Development Network and other relevant networks, including those established by non-governmental organizations. 10/

27. Governments should stimulate educational establishments, especially the tertiary sector, to contribute more to awareness building. Education materials of all kinds and for all audiences should be based on the best available scientific information, including both the natural and behavioural and social sciences, taking into account the aesthetic and ethical dimensions. 11/

28. Governments and the United Nations system should forge a cooperative relationship with the media, entertainment and advertising industries by initiating discussions to mobilize their useful role and experience in shaping public behaviour and consumption patterns and making wide use of their

methods. UNICEF should develop children-oriented material for media as an educational tool, ensuring close cooperation between the out-of-school public information sector and the school curriculum, from the primary level. UNESCO, UNEP and universities should enrich pre-service curricula for journalists on environment and development topics.

29. Governments, in cooperation with the scientific community, should establish ways of employing modern communication technologies to ensure that they reach out rapidly to all sectors of the population in new and effective ways. National educational authorities, and relevant United Nations agencies should expand the use of audio-visual methods, especially in rural areas, in mobile units, by producing television and radio spots for developing countries, involving local participation, employing interactive multimedia methods 12/ and integrating advanced methods with folk media.

30. Governments should support environment-related leisure and tourism activities, building on The Hague Declaration of Tourism (1989) and the current programmes of the World Tourism Organization and UNEP. They should promote sustainable tourism development, making full use of museums, heritage sites, zoos, botanical gardens, national parks and protected areas.

31. Non-governmental organizations should increase their involvement in achieving a societal consensus on environmental and development problems, through joint awareness initiatives and improved interchange with Governments, industry, science, trade unions, religious groups, media and consumers and between themselves. 13/ They should help integrate new cultural perspectives into scientific research priorities and facilitate communication with professional sources, especially in deprived rural and urban areas, and devise ways of giving recognition to successful activities. Portable educational kits and interactive games should be developed to suit local needs, using domestic sources, combined with electronic means. Field and collaborative programmes, such as student exchange, the United Nations Volunteers/UNDP Youth Environment Corps should be supported and intercommunity cooperation and experience sharing encouraged especially between sister cities and local authorities.

32. Governments and the United Nations system should increase their interaction with and encourage respect for less formal bodies of knowledge by involving indigenous people in the management, planning and development of their local environment, and promoting dissemination of traditional and socially learned knowledge through means based on local customs, especially in rural areas, integrating these efforts with the electronic media, whenever appropriate. 14/

33. UNICEF, UNESCO, UNDP and non-governmental organizations should develop support programmes to involve young people and children in environment and development issues, such as children's and youth hearings, building on decisions of the World Summit for Children. 15/

34. Governments, the United Nations and non-governmental organizations should encourage mobilization of women's groups in awareness campaigns, stressing the

role of the family in environmental activities, and women's contribution to transmission of knowledge and social values and in the development of human resources. 16/

35. Governments should raise the awareness of the population of the environmental impact of military activities, including the awareness of their armed forces, by involving them in conservation, tree-planting and other local action.

Means of implementation 17/

36. Total financing required to implement these activities would be around $1.2 billion per annum, including $100 million to be obtained from the international community; $10 million are needed for strengthening international institutions.

IV. PROMOTING TRAINING

Basis for action

37. Training is one of the most important tools to develop human resources and facilitate the transition to a more sustainable world. It should have a job-specific focus, aimed at filling gaps in knowledge and skill that would help individuals find employment and be involved in environmental and development work. At the same time, training programmes should promote a greater awareness of environment and development issues as a two-way learning process.

Objectives

38. The following objectives are proposed:

(a) To establish or strengthen vocational training programmes that meet the needs of environment and development with ensured access to training opportunities, regardless of gender, race or religion;

(b) To create a flexible and adaptable workforce of various ages equipped to meet growing environmental problems and changes arising from structural adjustment;

(c) To strengthen national capacities to enable Governments', employers' and workers' organizations to meet their environmental and development objectives and to facilitate the transfer of new environmentally and socially sound and appropriate technology;

(d) To ensure that environmental and human ecology considerations are integrated at all managerial levels and in all functional management areas, such as marketing, production and finance.

Activities

39. Governments with the support of the United Nations system should identify national manpower and training needs and assess measures to be taken to meet those needs. A review of progress in this area could be undertaken by the United Nations system in 1995.

40. Governments and educational institutions should integrate environmental and developmental issues into existing training curricula and promote the exchange of training curricula, methodologies and evaluations.

41. Governments should ensure that all sectors of society, such as industry, and universities, include an environmental management component in all relevant training activities, with emphasis on meeting immediate skill requirements through short-term formal and in-plant vocational and management training. 18/ Environmental management training capacities should be strengthened, and specialized "training of trainers" programmes should be established to support training at the national and enterprise levels. New training approaches for existing environmentally sound practices should be developed that create employment opportunities and make maximum use of local resource-based methods.

42. Governments should strengthen or establish practical training programmes for graduates from vocational schools, high schools and universities, particularly in developing countries, to enable them to meet labour market requirements and to achieve sustainable livelihoods. Training and retraining programmes should be established to meet structural adjustments which have an impact on employment and skill qualifications. 19/

43. Governments should provide training to the following specific population groups, enabling them to make a greater contribution to sustainable development: women, early school-leavers, migrant workers, refugees, indigenous peoples and groups of workers in urban and rural areas 20/ who are hard to reach.

44. Governments, industry, trade unions, and consumers should promote an understanding of the interrelationship between good environment and good business practices. Employers and workers and their organizations should be involved in drafting relevant legislation, providing a clearing-house regarding the choice of environment and development technologies, and maintaining a network for the exchange of information and training programmes on measures affecting occupational safety, health and environment as well as employment and career development opportunities. 21/

45. Governments and non-governmental organizations should develop a service of locally trained and recruited environmental technicians able to provide local people and communities, particularly in deprived urban and rural areas, with the services they require, starting from primary environmental care. 22/

46. Governments, universities and industry should enhance the ability to access, analyse and effectively use information and knowledge available on environment and development. 23/ Existing or established special training programmes should be strengthened to support information needs of special groups, including employers' organizations, trade unions, rural workers' organizations and non-governmental organizations, and evaluate the impact of these programmes on productivity, health, safety and employment. National and regional environmental labour-market information systems should be developed that would supply, on a continuing basis, data on environmental job and training opportunities. Environment and development training resource-guides should be prepared and updated, with information on training programmes, curricula, methodologies and evaluation results at the national, regional, and international levels.

47. Aid agencies should strengthen the training component in all development projects, emphasizing a multi-disciplinary approach, promoting awareness and providing the necessary skills. The environmental management guidelines of UNDP for operational activities of the United Nations system, for example, may contribute to this end.

48. Existing networks of employers' and workers' organizations, industry associations and non-governmental organizations should facilitate the exchange of experience concerning training and awareness programmes.

49. Governments with the help of the United Nations system (UNITAR) and intergovernmental organizations and non-governmental organizations should provide training in conducting environment/development negotiations and in implementing international environmental policy instruments.

50. Governments should implement human resource development strategies to deal with global environmental threats and national and regional environment and development problems and emergencies, emphasizing urgent practical training and awareness programmes for increasing public preparedness.

51. ILO should extend its training programmes, particularly its environmental training and support activities for employers' and workers' organizations, UNESCO, UNEP, FAO, UNDP, WHO, UNIDO, UNITAR, IUCN, and others.

Means of implementation 24/

52. Total financing required to implement these activities would be $5 billion per annum, including $2 billion to be obtained from international sources. Strengthening international institutions would require about $30 million.

Notes

1/ See A/CONF.151/PC/55 for more detail. Basic education has been strongly supported by the World Conference on Education for All (Jomtien, 1990) and the World Summit for Children (New York, 1990). See also chapter on "Combating poverty and meeting basic needs" (A/CONF.151/PC/100/Add.2).

2/ See chapter on "Strengthening the role of youth" (A/CONF.151/PC/100/Add.13, sect. II). The Associated Schools of UNESCO could be involved in these activities.

3/ See also chapter on "Information for decision making" (A/CONF.151/100/Add.12).

4/ The Talloires Declaration of University Presidents is one initiative. Existing networks such as "Copernicus", launched by the Conference of Rectors of European Universities (CRE), and the French-speaking University network (UREF) are examples of effective actions in the area. See also chapters on "Transfer of environmentally sound technology", "Science for sustainable development" and "Scientific and technological community" (A/CONF.151/PC/100/Add.9, 10 and 13, sect. VIII).

5/ See section on "Strengthening the role of major groups" (A/CONF.151/PC/100/Add.13).

6/ See chapter on "Women" (ibid., sect. I).

7/ See chapter on "Indigenous people" (ibid., sect. III).

8/ Several events are being planned, such as the World Congress on Education and Communication for Environment and Development (October 1992, Toronto), sponsored by UNESCO and ICC, the European Conference on Cooperation and Communication in the Field of Environmental Education (1992, Netherlands), and the Global Forum on Environmental and Development Education (September 1993, India).

9/ More support for education, training and public awareness activities related to environment and development could be provided in particular, through the following measures:

(a) Give higher priority to those sectors in budget allocations, protecting them from structural cutting requirements;

(b) Shift allocations within existing education budgets in favour of primary education, with focus on environment and development;

(c) Promote conditions where a larger share of the cost is borne by local communities, with rich communities assisting poorer ones;

(d) Obtain additional funds from private donors concentrating on the poorest countries, and those with rates of literacy below 40 per cent;

Notes (continued)

(e) Encourage debt for education swaps;

(f) Lift restrictions on private schooling and increase the flow of funds from and to non-governmental organizations, including small-scale grass-roots organizations;

(g) Promote the effective use of existing facilities, for example multiple school shifts, fuller development of open universities and other long-distance teaching;

(h) Facilitate low or no cost use of mass media for education purposes;

(i) Encourage twinning of universities in developed and developing countries.

The total requirement for primary education for all children was estimated at the World Conference on Education for All to be an additional $5 to $6 billion annually in local and international resources. Another $2 billion will be required for literacy training for adult women. By restructuring priorities, greater efficiency, cost recovery, etc. $3.5 to $4 billion might be obtained. Aid donors would be asked to contribute the shortfall, that is $3.5 to $4 billion.

It is more difficult to estimate the costs of environmental and development education, not the least due to its integrative nature. For the primary and secondary level total additional cost can be estimated as $500 million and $200 million. The tertiary level might require $300 million.

10/ See also chapter "Information for decision-making" (A/CONF.151/PC/100/Add.12).

11/ See chapters on "Science for sustainable development" and "Scientific and technological community" (A/CONF.151/PC/100/Add.10 and 13, sect. VIII).

12/ A flexible mixture of text, image and sound.

13/ See section on "Strengthening the role of major groups" (A/CONF.151/PC/100/Add.13).

14/ See chapter on "Indigenous people" (A/CONF.151/PC/100/Add.13, sect. III). The "Earth Restoration Corps" activities is one example that could be encouraged.

15/ See chapter on "Youth" (A/CONF.151/PC/100/Add.13, sect. II). The Environmental Youth Alliance is an example of a successful youth network.

16/ See chapter on "Women" (A/CONF.151/PC/100/Add.13, sect. I).

Notes (continued)

17/ The area of awareness building is extremely difficult to cost as a total. Some examples are available, which provide general guidance. Thus, UNEP allocations for public information activities. See also chapter on "National mechanisms and international cooperation for capacity building" (A/CONF.151/PC/100/Add.11).

18/ See chapter on "Strengthening the role of business and industry" (A/CONF.151/PC/100/Add.13, sect. VII).

19/ See chapters on "Science for sustainable development" and "Youth" (A/CONF.151/PC/100/Add.10 and Add.13, sect. II).

20/ See section on "Strengthening the role of major groups" (A/CONF.151/PC/100/Add.13).

21/ This action could build on the Final Declaration of the World Industry Conference on Environmental Management - WICEM II (April 1991, Netherlands). See chapters on "Business and industry" and "Protection and promotion of human health" (A/CONF.151/PC/100/Add.13, sect. VII and Add.5).

22/ See chapters on "National mechanisms and international cooperation for capacity building" and "Non-governmental organizations" (A/CONF.151/PC/100/Add.11 and Add.13, sect. IV).

23/ See chapter on "Information for decision-making" (A/CONF.151/PC/100/Add.12).

24/ A larger and fixed share of all development project funding could be earmarked for training. Donor aid could be tied to local projects and national institutions, to combat the brain-drain in developing countries.

Formal training costs are usually difficult to estimate. Informal, in-plant training are even more, and these have not been taken into account. Estimated total costs for training are $5 billion. $30 million for strengthening international institutions constitute 0.6 per cent of total costs.

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Promoting sustainable human settlement development
(Section I, Chapter 6 of Agenda 21)

Report of the Secretary-General of the Conference

I. INTRODUCTION

1. At its third session, the Preparatory Committee considered the report of the Secretary-General of the Conference on human settlements (A/CONF.151/PC/43).

2. In decision 3/3, the Preparatory Committee, welcomed the report and decided that human settlements should be treated as a distinct programme of Agenda 21; that its programme areas should address human settlements as a substantive framework for sustainable development; that programme areas such as atmosphere, land, coastal areas, freshwater and waste management should include the human settlement dimension; and that the views expressed by Governments on the report be reflected in Agenda 21 (A/46/48, vol. II, annex I).

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* See A/CONF.151/PC/96.

3. Human settlement conditions in the developing world continue to deteriorate. This is attributable in part to the low levels of investment in the sector. In the low-income countries for which recent data are available, an average of only 5.6 per cent of central government expenditure went to housing, amenities, social security and welfare. 1/ Expenditure by international support and finance organizations is equally low. For example, only 1 per cent of the United Nations system's total grant-financed expenditures in 1988 went to human settlements 2/ while in 1991, loans from the World Bank and the International Development Association (IDA) for urban development and water supply and sewerage amounted to 5.5 and 5.4 per cent, respectively, of their total lending. 3/

4. On the other hand, available information indicates that technical cooperation activities in the human settlement sector generates considerable public and private sector investment. For example, every dollar of United Nations Development Programme (UNDP) technical cooperation expenditure on human settlements in 1988 generated a follow-up investment of US$ 122, the highest of all UNDP sectors of assistance. 4/

5. This is the foundation of the "enabling approach" advocated for the human settlement sector. A significant increase in external assistance will help to generate the internal resources needed to improve the living and working environments of all people to the year 2000 and beyond.

Human settlement objective

6. The overall human settlement objective is to improve the social, economic and environmental quality of human settlements and the living and working environments of all people, in particular the urban and rural poor.

7. The programme areas included in this chapter are:

(a) Providing adequate shelter for all;

(b) Improving human settlement management;

(c) Promoting effective land-resource management;

(d) Promoting the integrated provision of environmental infrastructure: water, sanitation, drainage and solid waste management;

(e) Promoting sustainable energy and transport systems in human settlements;

(f) Promoting human settlement planning and management in disaster-prone areas;

(g) Promoting sustainable construction industry activities;

(h) Promoting human resource development and capacity-building for human settlement development.

II. PROGRAMME AREAS

A. Providing adequate shelter for all

1. Basis for action

8. Shelter is fundamental to a person's physical, psychological, social and economic well-being. Despite this, it is estimated that at the present time at least 1 billion people do not have access to decent shelter and that if appropriate global and national action is not taken, this number will increase dramatically by the end of the century and beyond.

9. A major global programme to address this problem is the Global Strategy for Shelter to the Year 2000, adopted by the General Assembly in December 1988 (resolution 43/181, annex). Despite its widespread endorsement, the Strategy needs a much greater level of political and financial support to enable it to reach its goal of facilitating adequate shelter for all by the end of the century.

2. Objective

10. The objective is to achieve adequate shelter for rapidly growing populations and for the currently deprived urban and rural poor by the year°2000 through an enabling approach to shelter development and improvement.

3. Activities

11. The following activities should be undertaken:

(a) Developing countries should, by 1995, adopt national shelter strategies based on the principles and recommendations contained in the Global Strategy for Shelter to the Year 2000, including the establishment of national targets for the elimination of housing deficits;

(b) Developing countries should support the shelter efforts of the urban and rural poor by adapting existing codes and regulations, by facilitating their access to land, finance and low-cost building materials and by actively promoting the regularization and upgrading of informal settlements;

(c) Developing countries should utilize new and innovative financing mechanisms for facilitating access to shelter by the urban and rural poor, including housing finance schemes adapted to their economic circumstances;

(d) Developing countries should document and monitor the implementation of their national shelter strategies by using, inter alia, the monitoring guidelines adopted by the United Nations Commission on Human Settlements and the shelter performance indicators produced jointly by the United Nations Centre for Human Settlements (Habitat) and the World Bank;

(e) External support organizations should increase their financial and technical assistance to all developing countries in support of their national shelter strategies;

(f) Global progress reports covering national action as well as support activities of international organizations and bilateral donors should be produced and disseminated on a biennial basis.

4. Means of implementation

(a) Financing and cost evaluation

12. The total requirements for obtaining adequate shelter conditions for the urban and rural poor by the year 2000 are about US$ 75 billion annually, to be financed primarily from household, community and national resources. About US$ 10 billion per year in external financing will be needed.

13. Annual support costs for strengthening international institutions in support of the Strategy's programme of action are estimated at US$ 10 million per year, a portion of which will be needed by the United Nations Centre for Human Settlements (Habitat), to support its role as the agency designated by the General Assembly as the secretariat for the Strategy.

(b) Scientific and technological means

14. The requirements under this heading are addressed in each of the other programme areas included in the present chapter.

(c) Human resource development and capacity-building

15. Developed countries and support and funding agencies should provide specific assistance to developing countries in adopting an enabling approach to the provision of shelter for all, including training activities for government officials, professionals, communities and non-governmental organizations.

B. Improving human settlement management

1. Basis for action

16. By the turn of the century, the majority of the world's population will be living in cities. While urban settlements, particularly in developing countries, are showing many of the symptoms of the global environment and development crisis, they nevertheless generate 60 per cent of gross national product and can develop the capacity to sustain their productivity, improve the living conditions of their residents and manage natural resources in a sustainable way.

2. Objectives

17. The objectives are to improve the management of urban settlements in developing countries in order to enhance their contribution to national economic development goals, to improve living conditions of residents and to support rural development.

3. Activities

(a) Improve urban management

18. A comprehensive framework for strengthening management already exists in the United Nations Development Programme/World Bank/United Nations Centre for Human Settlements (Habitat) Urban Management Programme (UMP), a concerted global effort to assist developing countries in addressing urban management issues. Its coverage should be extended to all interested countries during the period 1993-2000. Developing countries should undertake the following activities at the national and local levels with the assistance of the Urban Management Programme and other external support agencies:

(a) Adopt and apply urban management guidelines in the areas of land management, urban environmental management, infrastructure management and municipal finance and administration;

(b) Accelerate efforts to reduce urban poverty through a number of actions, including:

(i) Generate employment for the urban poor, through the provision, improvement and maintenance of urban infrastructure and services and the support of economic activities in the informal sector, such as repairs, recycling, services and small commerce;

(ii) Provide specific assistance to the poorest of the urban poor through, inter alia, the creation of social infrastructure in order to reduce hunger and homelessness, and the provision of adequate community services;

(c) Adopt innovative city planning strategies aimed at a more equitable sharing of infrastructure and service provision between wealthier and poorer urban areas.

(b) Strengthen urban data systems

19. All developing countries should undertake during the period 1993-2000 pilot projects in selected cities for the collection, treatment and subsequent dissemination of urban data at the local, national and international levels and the establishment of city data management capabilities. 5/

(c) Encourage intermediate city development

20. Intermediate cities can relieve pressure on existing large urban agglomerations, create employment opportunities for unemployed labour in the rural areas and support rural-based economic activities.

21. For this purpose, developing countries should conduct reviews of urbanization processes and policies, identify the factors that determine the growth of urban centres and apply urban planning and management approaches specifically suited to the needs and characteristics of their growing intermediate-sized cities. They should also concentrate on activities aimed at facilitating the transition from rural to urban lifestyles and settlement patterns and at promoting the development of small-scale economic activities to support local income generation and the production of intermediate goods and services for rural hinterlands.

(d) Develop strategies for sustainable cities

22. Individual cities in developing countries, in particular those characterized by severe environmental problems, should initiate programmes aimed at addressing such problems and guiding their development along a sustainable path. International initiatives already exist in support of such efforts in the UNCHS Sustainable Cities Programme of the United Nations Centre for Human Settlements (Habitat) and the Healthy Cities Programme of the World Health Organization (WHO). Additional initiatives involving the World Bank, the regional development banks and bilateral agencies should be strengthened and coordinated. Individual cities should:

(a) Institutionalize a participatory approach to sustainable urban development, based on a continuous dialogue between the actors involved in urban development (public sector, private sector and communities);

(b) Improve the urban environment, inter-alia, through the creation and rehabilitation of open spaces, tree planting and the enhancement of other public amenities;

(c) Activate "green works" programmes designed to create employment for low-income urban residents through urban environmental improvement projects;

(d) Participate in international "sustainable city networks", to exchange experiences and mobilize national and international technical and financial support.

(e) Support linkages and cooperation between cities

23. Cities of the developing countries should reinforce cooperation among themselves and cities of the developed countries, under the aegis of non-governmental organizations active in this field, such as the International Union of Local Authorities (IULA), the International Council for Local Environmental Initiatives (ICLEI) and the World Federation of Twin Cities.

4. Means of implementation

(a) Financing and cost evaluation

24. Total annual requirements, primarily for infrastructure maintenance and operations for municipal services in developing countries are roughly estimated at US$ 100 billion, to be financed mostly by revenues. The total external financial and technical assistance required is estimated at about US$ 15 billion per year. About US$ 10 million would be needed for strengthening international institutions.

(b) Human resource development and capacity-building

25. Developing countries should, with international assistance, focus on training and developing a cadre of urban managers, technicians and administrators needed to successfully manage sustainable urban development and growth and equipped with the skills necessary to analyse and adapt innovative experiences of other cities. For this purpose, the full range of training methods - from formal education to the use of the mass media - should be utilized, as well as the "learning by doing" option.

26. Capacity-building activities carried out by developing countries, assisted as suggested above, should go beyond the training of individuals and functional groups to include institutional arrangements, administrative routines, inter-agency linkages, information flows and consultative processes.

27. In addition, the Urban Management Programme, in cooperation with multilateral and bilateral agencies, should continue to assist the developing countries in their efforts to develop a participatory structure by mobilizing the human resources of the private sector, non-governmental organizations and the poor.

C. Promoting effective land-resource management

1. Basis for action

28. In rapidly growing urban areas, access to land is rendered increasingly difficult by the conflicting demands of industry, housing, commerce, agriculture and the need for open spaces. Furthermore, the rising costs of urban land prevent the poor from gaining access to suitable land. In rural areas, unsustainable practices, such as the exploitation of marginal lands and the encroachment on forests and ecologically fragile areas by commercial interests and landless rural populations, result in environmental degradation as well as in diminishing returns for impoverished rural settlers.

2. Objective

29. The objective is to provide for the land requirements of human settlement development including, if possible, the provision of minimum plots to all people by the year 2000 and beyond. 6/

3. Activities

30. Developing countries should undertake a comprehensive national inventory of their land resources in order to establish a land information system in which land resources will be classified according to their most appropriate uses and environmentally fragile or disaster-prone areas will be identified for special protection measures.

31. Subsequently, developing countries should develop national land-resource management plans to guide land-resource development and utilization as follows:

(a) Create efficient land markets which meet collective human settlement development needs;

(b) Develop fiscal incentives and land-use control measures, including land-use planning solutions for a more rational use of limited land resources;

(c) Encourage public-private partnerships in managing land resources for human settlement purposes;

(d) Strengthen community-based land-resource protection practices in existing urban and rural settlements;

(e) Establish appropriate forms of land tenure designed to provide security of tenure for all land-users, especially the low-income urban dwellers and the rural poor;

(f) Adapt land-use patterns to the needs of low-income residents, and accelerate efforts to promote access to land by the urban and rural poor, including credit schemes for the purchase of minimum plots.

32. At the international level, the following activities should be undertaken:

(a) Promote global awareness, through public information and education, of the negative consequences of land degradation resulting from unplanned settlement development;

(b) Promote guidelines to minimize the adverse impact on people, settlements and the environment of large-scale economic activities and projects;

(c) Establish a global land-resource management support programme to coordinate the land-related activities of UNDP, the Food and Agriculture Organization of the United Nations (FAO), the World Bank, the regional development banks, other interested organizations and the UNDP/World Bank/United Nations Centre for Human Settlements (Habitat) Urban Management Programme, and to promote the transfer of applicable experience on sustainable land-management practices to and among developing countries.

4. Means of implementation

(a) Financing and cost evaluation

33. The overall cost is about US$ 3 billion annually, including about US$ 300 million from the international community. About US$ 4 million will be needed for strengthening international organizations.

(b) Scientific and technological means

34. Developing countries alone or in regional or subregional groupings should be given access to modern techniques of land-resource management, such as geographical information systems, satellite photography/imagery and other remote-sensing technologies.

(c) Human resource development and capacity-building

35. Most developing countries should be assisted by international support and funding agencies in undertaking training activities in land-resource planning and management skills in order to:

(a) Strengthen the capacity of local educational and training institutions to provide formal training of land management technicians and professionals;

(b) Initiate the organizational review of government ministries and agencies responsible for land questions, in order to devise more efficient mechanisms of land-resource management, and carry out periodic in-service refresher courses for their managers and staff in order to familiarize them with up-to-date land-resource management technologies;

(c) Provide the above agencies with modern equipment, such as computer hardware and software and survey equipment;

(d) Initiate programmes to promote an international and interregional exchange of information and experience in land management through the establishment of professional associations in land management sciences and related activities, such as workshops and seminars.

D. Promoting the integrated provision of environmental infrastructure: water, sanitation, drainage and solid waste management

1. Basis for action

36. Human settlements make heavy demands on natural resources and generate a variety of by-products that adversely affect the health and quality of life of people and cause the deterioration and depletion of the environmental resources essential for long-term sustainable development.

37. An integrated approach to the provision of adequate infrastructure in human settlements, in particular for the urban and rural poor, is an investment in sustainable development, as it will result not only in the protection of the environment but also in increased productivity, improved health and a reduced burden of investment in curative medicine and poverty alleviation.

38. Most of the activities whose management would be improved by an integrated approach, are covered in Agenda 21 as follows: section I chapter 5 (Protection and promotion of human health conditions) and section II, chapters 1 (Protecting the atmosphere), 10 (Protection of the quality and supply of freshwater resources) and 13 (Environmentally sound management of solid wastes and sewage-related issues).

2. Objective

39. The objective is to ensure the provision of adequate environmental infrastructure facilities in all settlements by the year 2025. The achievement of this objective would require that all developing countries be endowed with the necessary technical, financial and human resource capacity by the year 2000.

3. Activities

40. A settlement infrastructure and environment programme (SIEP) should be launched following the Conference, with the participation of bilateral donors and multilateral agencies, including the United Nations Centre on Human Settlements (Habitat), UNDP, WHO, the United Nations Children's Fund (UNICEF), the World Bank and the regional development banks. It should ensure the coordination of the activities of all organizations and bodies engaged in providing environmental infrastructure for urban and rural settlements and should include among its activities monitoring, applied research, capacity-building, transfer of appropriate technology and technical cooperation.

41. SIEP should assist developing countries at the national and local levels in adopting an integrated approach to the provision of water supply, energy, sanitation, drainage and solid waste management and ensure that this approach is applied in particular to environmental infrastructure improvement in informal settlements based on regulations and standards that take into account the living conditions and resources of the communities to be served.

42. By the end of 1995, pilot programmes should be established by SIEP in a number of developing countries. Thereafter, it should be in a position to provide advisory services to all interested developing countries for the implementation of environmental infrastructure programmes.

4. Means of implementation

(a) Financing and cost evaluation

43. Financial requirements for major development programmes are estimated in other chapters, especially those dealing with health, energy, freshwater resources, sanitation and solid wastes. Annual technical assistance requirements for SIEP are estimated at about US$ 50 million; US$ 3 million will be needed to strengthen international institutions.

(b) Scientific and technological means

44. Scientific and technological means are already described in detail under the programmes whose activities SIEP is to coordinate. In particular, SIEP should:

(a) Accelerate research in the area of integrated policies of environmental infrastructure programmes and projects based on cost-benefit analysis and overall environmental impact;

(b) Promote methods of assessing "effective demand" as a criterion for technology choice.

(c) Human resource development and capacity-building

45. With the assistance of support and funding agencies, developing countries should undertake training aimed at:

(a) Raising awareness of the means, approaches and benefits of the provision of environmental infrastructure facilities, especially among low-income groups;

(b) Developing a cadre of professionals with adequate skills in integrated infrastructural service planning and maintenance of resource efficient, environmentally sound and socially acceptable systems;

(c) Strengthening the institutional capacity of local authorities in the integrated provision of adequate infrastructure services in partnership with local communities and the private sector;

(d) Adopting appropriate legal and regulatory instruments, including cross-subsidy arrangements, to extend the benefits of adequate and affordable environmental infrastructure to unserved population groups, especially the poor.

E. Promoting sustainable energy and transport systems in human settlements

1. Basis for action

46. Most of the commercial and non-commercial energy produced today is used in, and for, human settlements and a substantial percentage of it is used by the household sector. Developing countries are faced by the need to increase their energy production to accelerate development and raise the living standards of their populations, while at the same time reducing energy production costs and energy-related pollution.

47. Transport accounts for about 30 per cent of commercial energy consumption and for about 60 per cent of total global consumption of liquid petroleum. In developing countries, rapid motorization and the lack of resources for investment in urban transport planning, traffic management and infrastructure, are creating increasing problems in terms of health, noise, congestion and loss of productivity. All of these problems have a severe impact on low-income urban populations.

2. Objectives

48. The objectives are to extend the provision of energy for human settlements and to reduce negative impacts of energy production and use on human health and on the environment.

3. Activities

49. The principal activities relevant to this programme area are included in Agenda 21 as follows: section II, chapter 1 (Protecting the atmosphere), programme area A (Promoting sustainable energy development) and programme area B (Promoting transport systems which are specifically safe and environmentally sound).

50. In the area of urban transport, developing countries should adopt a comprehensive approach to urban transport planning and management. For this they should:

(a) Integrate land-use and transportation planning to encourage development patterns which reduce transport demand;

(b) Adopt urban transport programmes favouring high-occupancy public transport;

(c) Encourage non-motorized modes of transport by providing safe cycleways and footways in urban centres;

(d) Devote particular attention to effective traffic management, to efficient operation of public transport and to maintenance of transport infrastructure.

4. Means of implementation

(a) Financing and cost evaluation

51. The financing for this programme area is included in the estimate for part II, chapter 1 of Agenda 21 (Protecting the atmosphere).

(b) Human resource development and capacity-building

52. In order to enhance the skills of energy service and transport professionals and institutions, developing countries should:

(a) Provide on-the-job training of government officials, planners and managers involved in the energy service and transport section;

(b) Raise public awareness about the environmental impacts of transport and travel behaviour through mass media campaigns and support for non-governmental and community initiatives promoting the use of non-motorized transport, shared driving and improved traffic safety measures;

(c) Strengthen regional, national and private sector institutions that provide education and training on energy service and urban transport planning and management.

F. Promoting human settlement planning and management in disaster-prone areas

1. Basis for action

53. Natural disasters cause loss of life, disruption of economic activities and environmental damage, such as loss of fertile agricultural land and contamination of water resources, and can lead to major resettlement of populations. Over the past two decades they are estimated to have caused some 3 million deaths and affected 800 million people. Global economic losses have been estimated by the Office of the United Nations Disaster Relief Coordinator to be in the range of US$ 30-50 billion per year. 7/

54. The General Assembly, in resolution 44/236, proclaimed the 1990s as the International Decade for Natural Disaster Reduction. The goals of the Decade 8/ bear relevance to the objectives of the present programme area.

2. Objective

55. The objective is to enable all countries, in particular those that are disaster-prone, to mitigate the negative impact of natural and man-made disasters on human settlements.

3. Activities

56. Three distinct areas of activity are foreseen under this programme area, namely the development of a "culture of safety", pre-disaster planning and post-disaster reconstruction.

(a) Develop a culture of safety

57. To promote a "culture of safety" in all countries, especially those that are disaster-prone, the following activities should be carried out:

(a) Complete national and local studies on the nature and occurrence of natural disasters, their impact on people and economic activities, the effects of inadequate construction in hazard-prone areas, and the social and economic advantages of adequate pre-disaster planning;

(b) Implement nation-wide and local awareness campaigns through all available media, translating the above knowledge into information easily comprehensible to the general public and to the populations directly exposed to hazards;

(c) Develop global, regional, national and local early warning systems to alert populations to impending disasters.

(b) Develop pre-disaster planning

58. Pre-disaster planning should form an integral part of human settlement planning in all countries. The following should be included:

(a) Complete multi-hazard research into risk and vulnerability of human settlements and settlement infrastructure, including water and sewerage, communication and transportation networks, as one type of risk reduction may increase vulnerability to another (e.g., an earthquake resistant house made of wood will be more vulnerable to wind storms);

(b) Develop methodologies for determining risk and vulnerability within specific human settlements and incorporate risk and vulnerability reduction into the human settlement planning and management process;

(c) Prepare guidelines on location, design and operation of potentially hazardous industries and activities;

(d) Develop tools (legal, economic etc.) to encourage disaster-sensitive development, including means of ensuring that limitations on development options are not punitive to owners, or incorporate alternative means of compensation;

(e) Further develop and disseminate information on disaster-resistant building materials and construction technologies for buildings and public works in general;

(f) Develop training programmes for contractors and builders on disaster-resistant construction methods (particularly small enterprises, which build the great majority of housing and other small buildings in the developing countries).

(c) Initiate post-disaster reconstruction and rehabilitation planning

59. The international community as a major partner in post-reconstruction and rehabilitation should ensure that the countries involved derive the greatest benefits from the funds allocated by undertaking the following activities:

(a) Carry out research on past experiences on the social and economic aspects of post-disaster reconstruction and adopt effective strategies and guidelines for post-disaster reconstruction with particular focus on development focused strategies in the allocation of scarce reconstruction resources;

(b) Prepare and disseminate international guidelines for adaptation to national and local needs.

4. Means of implementation

(a) Financing and cost evaluation

60. External assistance will continue to be required for post-disaster investments, which are roughly estimated to run at about US$ 600 million annually. Technical assistance connected with this programme area could cost about US$ 50 million annually; US$ 2 million is suggested for strengthening international organizations.

(b) Scientific and technological means

61. Scientists and engineers specializing in this field in both developing and developed countries should collaborate with urban and regional planners in order to provide the basic knowledge and means to mitigate losses due to disasters.

(c) Human resource development and capacity-building

62. Developing countries should conduct training programmes on disaster-resistant construction methods for contractors and builders, who

build the majority of housing in the developing countries. This should focus on the small business enterprise.

63. Training programmes should be extended to government officials and planners and community and non-governmental organizations to cover all aspects of disaster mitigation, such as early warning techniques, pre-disaster planning and construction, post-disaster construction and rehabilitation.

G. Promoting sustainable construction industry activities

1. Basis for action

64. The activities of the construction sector are vital to the achievement of the national socio-economic development goals of providing shelter, infrastructure and employment. However, they are also a major source of environmental damage through depletion of the natural-resource base, degradation of fragile eco-zones, chemical pollution and the use of building materials harmful to human health.

2. Objectives

65. The objectives are first, to adopt policies and technologies to enable the construction sector to meet human settlement development goals while avoiding harmful side-effects on human health and on the biosphere and, second, to enhance the employment-generation capacity of the construction sector.

3. Activities

66. Developing countries should:

(a) Formulate programmes to enhance the utilization of local materials by the construction sector by expanding technical support and incentive schemes for, increasing the capabilities and economic viability of small-scale and informal operatives who make use of indigenous materials and methods and traditional construction techniques;

(b) Adopt standards and other regulatory measures which promote the increased use of energy-efficient technologies and sustainable utilization of natural resources;

(c) Formulate appropriate land-use policies and introduce planning regulations specially aimed at protection of eco-sensitive zones against physical disruption by construction and construction-related activities;

(d) Promote the use of labour-intensive construction and maintenance technologies which generate employment in the construction sector for the underemployed labour force found in most large cities;

(e) Adopt measures to increase the affordability of building materials on the part of the urban and rural poor, through, inter alia, credit schemes and bulk procurement of building materials for sale to small-scale builders and communities.

67. Industrialized countries should:

(a) Promote the development and dissemination of databases on the adverse environmental effects of building materials and introduce legislation and financial incentives to promote recycling of energy-intensive materials in the construction industry and conservation of waste energy in building-materials production methods;

(b) Introduce regulatory measures, e.g., certification and eco-labelling schemes for the use of such non-renewable natural resources as tropical hardwoods in construction, and use economic instruments, such as product charges, to discourage the use and consumption of construction materials and products which create pollution during their life-cycle;

(c) Transfer to developing countries appropriate technologies for resource management in construction, particularly for non-renewable resources.

4. Means of implementation

(a) Financing and cost evaluation

68. It is roughly estimated that the construction activities of developing countries amount to about US$ 400 billion annually and will increase by about US$ 20 billion annually. The stream of new investments for these levels of activity and to bring in clean technologies is estimated at US$ 40 billion annually, primarily from private sources. If 10 per cent of the new investments come from the international community, this would amount to US$ 4 billion annually. About US$ 3 million would be needed to strengthen international organizations.

(b) Human resource development and capacity-building

69. Developing countries should be assisted by international support and funding agencies in upgrading the technical and managerial capacities of the small entrepreneur and the vocational skills of operatives and supervisors in the building materials industry, using both formal and informal training methods. These countries should also be assisted in developing programmes to encourage the use of non-waste and clean technologies through appropriate transfer of technology.

H. Promoting human resource development and capacity-building for human settlement development

1. Basis for action

70. Developing countries, in addition to shortcomings in the availability of specialized expertise in the areas of housing, settlement management, land management, infrastructure, construction, energy, transport, and pre-disaster planning and reconstruction, face three cross-sectoral human resource development and capacity-building shortfalls. First is the absence of an enabling policy environment capable of integrating the resources and activities of the public sector, the private sector and the community, or social sector; second is the weakness of specialized training institutions; and third is the insufficient capacity for technical training and assistance for low-income communities, both urban and rural.

2. Objective

71. The objective is to improve human resource development and capacity-building in developing countries by enhancing the personal and institutional capacity of all actors involved in human settlement development.

3. Activities

72. Specific human resource development and capacity-building activities have been built into each of the programme areas of this chapter. More generally, however, additional steps should be taken to reinforce those activities. In order to do so, developing countries should take the following action:

(a) Create an enabling policy environment supportive of the partnership between the public, private and community sectors;

(b) Re-orient the curricula and programmes of national institutions providing training for technicians, professionals and administrators, and strengthen their capacity to address priority training needs;

(c) Provide direct assistance for human settlement development at the community level.

73. Both international organizations and non-governmental organizations should support the above activities by, inter alia, strengthening subregional training institutions, providing updated training materials and disseminating the results of successful human resource and capacity-building activities, programmes and projects.

4. Means of implementation

(a) Financing and cost evaluation

74. International technical assistance to support national programmes is estimated at about US$ 60 million annually; US$ 5 million will be needed for strengthening international institutions.

(b) Scientific and technological means

75. Formal training and non-formal kinds of human resource development and capacity-building programmes should be combined, and use should be made of user-oriented training methods, up-to-date training materials and modern audio-visual communication systems.

Notes

1/ No aggregate figures are available on internal expenditure or official development assistance on human settlements. However, data available in the World Development Report, 1991, for 16 low-income developing countries show that the percentage of central government expenditure on housing, amenities, and social security and welfare for 1989 averaged 5.6 per cent, with a high of 15.1 per cent in the case of Sri Lanka, which has embarked on a vigorous housing programme. In OECD industrialized countries, during the same year, the percentage of central government expenditure on housing, amenities and social security and welfare ranged from a minimum of 29.3 per cent to a maximum of 49.4 per cent, with an average of 39 per cent (World Bank, World Development Report, 1991, World Development Indicators, table 11 (Washington, D.C., 1991), forthcoming.

2/ See the report of the Director-General for Development and International Economic Cooperation, containing preliminary statistical data on operational activities of the United Nations system for 1988 (A/44/324-E/1989/106/Add.4, annex).

3/ World Bank Annual Report, 1991 (Washington, D.C. 1991).

4/ UNDP, "Reported investment commitments related to UNDP-assisted projects, 1988", table 1, "Sectoral distribution of investment commitment in 1988-1989".

5/ A pilot programme of this type, the City Data Programme (CDP), is already in operation in the United Nations Centre on Human Settlements (Habitat) aimed at the production and dissemination to participating cities of micro-computer application software designed to store, process and retrieve city data for local, national and international exchange and dissemination.

6/ This calls for integrated land-resource management policies, which are also addressed in section II, chapter 2 of Agenda 21 (Integrated approach to planning and management of land resources).

Notes (continued)

7/ Estimates of the Office of the United Nations Disaster Relief Coordinator.

8/ The goals of the International Decade for Natural Disaster Reduction, set out in the annex to General Assembly resolution 44/236 are as follows:

(a) To improve the capacity of each country to mitigate the effects of natural disasters expeditiously and effectively, paying special attention to assisting developing countries in the assessment of disaster damage potential and in the establishment of early-warning systems and disaster-resistant structures when and where needed;

(b) To devise appropriate guidelines and strategies for applying existing scientific and technical knowledge, taking into account the cultural and economic diversity among nations;

(c) To foster scientific and engineering endeavours aimed at closing critical gaps in knowledge in order to reduce loss of life and property;

(d) To disseminate existing and new technical information related to measures for the assessment, prediction and mitigation of natural disasters;

(e) To devlop measures for the assessment, prediction, prevention and mitigation of natural disasters through programmes of technical assistance and technology transfer, demonstration projects, and education and training, tailored to specific disasters and locations, and to evaluate the effectiveness of those programmes.

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PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT ON THE BASIS OF GENERAL ASSEMBLY RESOLUTION 44/228 AND TAKING INTO ACCOUNT OTHER RELEVANT GENERAL ASSEMBLY RESOLUTIONS: CROSS-SECTORAL ISSUES

Integration of environment and development in decision-making

(Section I, chapter 7, of Agenda 21)

Report of the Secretary-General of the Conference

1. The present chapter has been prepared in response to Preparatory Committee decision 3/9 entitled "Sustainability, international economy, integrated-environmental accounting and economic instruments", within the structure provided in decision 3/2 entitled "Structure and organization of Agenda 21" (see A/46/48, vol. II, annex I). The Secretary-General of the Conference has endeavoured to provide a coherent programme, consolidating all relevant material. Documents A/CONF.151/PC/49, A/CONF.151/PC/50 and A/CONF.151/PC/62 have been drawn upon, and views expressed by Governments during the debates taken fully into account.

2. It is now widely recognized that, for long-term economic development to be sustainable, environmental quality and stocks of natural resources must be conserved. In the past two decades, there has been some progress through the

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* See A/CONF.151/PC/96.

application of conventional environmental policy together with economic policy. It is now clear that this is not enough; environment and development must be taken into account at each step of decision-making and action should be taken in an integrated manner. These steps include information on which decisions can be based; goal-setting and policy formulation; legislation and regulations; fiscal provisions and economic instruments; planning mechanisms and institutions; analytical tools and management procedures. The challenge now is to achieve this integration at all levels of decision-making, providing the means of making the transition to sustainability.

3. The present chapter 1/ consists of four programmes:

(a) Integrating environment and development at the policy, planning and management levels;

(b) Providing an effective legal and regulatory framework;

(c) Making effective use of economic instruments and market incentives;

(d) Establishing systems for integrated environmental and economic accounting.

II. PROGRAMME AREAS

A. Integrating environment and development at the policy, planning and management levels

1. Basis for action

4. Prevailing systems for decision-making continue to separate macroeconomic and environmental factors - at the policy, planning and management levels. This influences the actions of all groups in society, including Governments, industry and individuals, and has important implications for the efficiency and sustainability of development. It is now widely accepted that a fundamental reshaping of decision-making is necessary, and the view is that environment and development should be put at the centre of economic and political decision-making, in effect achieving a full integration of these factors. 2/ In recent years, some Governments have also begun to make significant changes in the institutional structures of government in order to enable more systematic consideration of the environment when decisions are made on economic, fiscal, energy, agricultural, transportation, trade and other policies, as well as the implications of policies in those areas for the environment. New forms of dialogue are also being developed for achieving better integration among government, industry, science, environmental groups and the public in the process of developing effective approaches to environment and development. The main responsibility for bringing about changes lies with Governments, although in many instances collaboration with national and international organizations 3/ will be useful. Exchange of experience among countries can also be significant.

2. Objectives

5. The overall objective is to restructure the decision-making process so that consideration of socio-economic and environmental issues is fully integrated. In particular, the specific objectives are as follows:

(a) To establish procedures to internalize the integration of environment and development issues, and accountability for them, at the policy, planning, management and implementation levels within three years;

(b) To establish improved mechanisms to facilitate the active involvement of all groups of society in decision-making at all levels within three years;

(c) To strengthen institutional structures to allow the full integration of environmental and developmental issues within five years;

(d) To systematically review and redirect macroeconomic, sectoral and environmental policies, strategies and plans to ensure the full integration of environmental and developmental issues within five years.

3. Activities

(a) Restructure decision-making processes

6. The primary need is to bring environmental considerations into decision-making processes concerning economic and development issues. Governments should review and, where appropriate, restructure the processes of decision-making so as to achieve the full integration of economic and environmental issues in the pursuit of development that is economically efficient, socially equitable and environmentally sound. In particular, Governments should:

(a) Ensure the integration of and accountability for environmental, economic and developmental considerations in the terms of reference of the highest decision-making body (cabinet or equivalent), the bodies dealing with national economic and fiscal policy and key sectoral departments of Government (ministries or equivalent);

(b) Adopt a policy framework that reflects a long-term perspective and cross-sectoral approach as the basis for decisions, taking account of the linkages between and within the various political, economic, social and environmental issues involved in the development process;

(c) Establish coordination mechanisms that ensure the harmonization of all macroeconomic, sectoral and environmental policies, plans and policy instruments, including fiscal measures and the budget; these mechanisms should apply at various levels (cabinet, interministerial, interdepartmental; federal/state/municipal); 4/

(d) Establish consultation mechanisms that bring together all involved in the development process, including the central economic, environmental and sectoral interests, industry, the private sector, stakeholders and interest groups; 5/

(e) Monitor and evaluate the development process systematically, conducting regular reviews of the state of human development, economic conditions and trends, the state of the environment and natural resources; this should be complemented by annual sustainable development audits tied to budget and tied to accountability in the various sectors and departments of Government;

(f) Ensure accountability for environmental implications of economic and sectoral policies within Governments and between Governments and the public;

(g) Make relevant information available to the public.

(b) Improve planning and management systems

7. To support a more integrated approach to decision-making, the data systems and analytical methods used to support such decision-making processes also need to be reoriented. Governments, in collaboration, where appropriate, with national and international organizations, should review the status of the planning and management system and, where necessary, modify and strengthen procedures so as to facilitate the integrated consideration of social, economic and environmental issues. In particular, they should:

(a) Improve the use of data and information at all stages of planning and management, making systematic and simultaneous use of social, economic and environmental data; analysis should stress interactions and synergisms; a broad range of analytical methods should be encouraged so as to provide various points of view; 6/

(b) Adopt comprehensive analytical procedures for prior and simultaneous assessment of the impacts of decisions, including the impacts within and among the economic and environmental spheres; these procedures should extend beyond the project level to policies and programmes; analysis should also include assessment of costs, benefits and risks;

(c) Adopt flexible and integrative planning approaches that allow the consideration of multiple goals and enable adjustment of changing needs; integrative area approaches at the ecosystem or watershed level can assist in this;

(d) Adopt integrated management systems, particularly for the management of natural resources; traditional or indigenous methods should be applied wherever they have proved effective;

(e) Use policy instruments as a tool for planning and management to ensure automatic regulation and incorporation of efficiency criteria in decisions; legal/regulatory and economic instruments should be regularly reviewed and adapted to ensure that they continue to be effective; 7/

(f) Delegate planning and management responsibilities to the lowest possible level so that action resides with the natural stakeholders.

(c) Adopt a national strategy for sustainable development

8. Governments, in cooperation, where appropriate, with international organizations, should adopt a national strategy for sustainable development based on the implementation of decisions taken at the Conference, particularly in respect of Agenda 21. This strategy should build upon the national development plan and harmonize, within its framework, the various macroeconomic, sectoral and environmental plans that are operating in the country; its goals should be to ensure equitable economic advancement while protecting the resource base and the environment; it should be developed by consensus, with the widest possible participation of groups within society; it should be based on a thorough assessment of the current situation and trends, building on such analytical initiatives as the Conference's national report process. 4/

4. Means of implementation

(a) Financing and cost evaluation

9. To assist developing countries, it is suggested that technical cooperation funding from international sources be made available at an annual cost of about US$ 50 million.

(b) Research environment and development interactions

10. Governments, in collaboration with the national and international scientific community and in cooperation with international organizations, should intensify efforts to clarify the interactions between and within the social, economic and environmental systems. Research should be undertaken with the explicit objective of assisting policy decisions and providing direction to management practices. 8/

(c) Enhance education and training

11. Governments, in cooperation, where appropriate, with national, regional or international organizations, should ensure that essential human resources exist to undertake the integration of environment and development at all stages of the decision-making and implementation process. To do this, they should improve education by including interdisciplinary approaches in the technical, vocational and university curricula. They should also undertake systematic training of government personnel, planners and managers on a

regular basis, giving priority to the various integrative approaches and planning and management techniques. 9/

(d) Promote public awareness

12. Governments, in cooperation with national institutions and groups, the media and the international community, should promote awareness in the public at large, as well as in specialized circles, of the importance of considering environment and development simultaneously in development actions. Priority should be given to highlighting the responsibilities and potential contributions of different social groups. 9/

(e) Strengthen national institutional capacity

13. Governments, in cooperation, where appropriate, with international organizations, should strengthen national institutional capacity to integrate economic, social and environmental issues at all levels of decision-making and implementation. Priority should be given to moving away from narrow sectoral approaches, progressing towards full cross-sectoral coordination and cooperation. The institutional mandates should be redefined to explicitly include an integrated perspective. 4/

B. Providing an effective legal and regulatory framework

1. Basis for action

14. Laws and regulations are among the most important instruments for transforming environment and development policies into action - not only through "command and control" methods but also as a normative framework for economic planning and market instruments. 7/ Yet, although the volume of legal texts in this field is steadily increasing, much of the law-making has been ad hoc and piecemeal, or has not been endowed with the necessary institutional machinery and authority for enforcement and timely adjustment. The legal process, which ought to facilitate progress towards sustainable patterns of development, is often ill-adapted to the scale and pace of economic and social change - and to the degree of public participation and transparency of decision-making - required for this purpose.

15. While there is continuous need for law reform in all countries, developing countries have been particularly affected by the shortcomings of laws and regulations often dating back to the colonial period. To ensure timely adjustment, technical support is needed both for the drafting of new or revised legal instruments and for their practical implementation, including the appropriate institutions and remedies. Technical cooperation requirements in this field include legal information, advisory services and specialized training and institutional capacity-building.

16. The enactment and enforcement of laws and regulations (at the national, state/provincial or local/municipal level) is also essential for the implementation of most international agreements in the field of environment and development, as illustrated by the frequent treaty obligation to report on legislative measures. The survey of existing agreements undertaken in the context of conference preparations has indicated serious problems of compliance in this respect, and the need for improved monitoring and related technical assistance. 10/

2. Objectives

17. The overall objective is to promote the integration of environment and development policies through appropriate legal and regulatory instruments at the national and local level. Specific objectives include the following:

(a) To disseminate information on effective legal and regulatory innovations in the field of environment and development, including non-coercive instruments and compliance incentives, with a view to encouraging their wider use and adaption at the national and local level;

(b) To assist developing countries and economies in transition in their national efforts to modernize and strengthen the legal and regulatory framework of governance for sustainable development, having due regard for local social values and infrastructures;

(c) To monitor and review domestic legal instruments giving effect to international agreements on environment and development, with a view to promoting compliance and further harmonization.

3. Activities

(a) Make laws and regulations more effective

18. Governments, with the assistance of competent international organizations, should regularly review and assess the laws and regulations enacted and the related institutional/administrative machinery established at the national/state and local/municipal level in the field of environment and sustainable development, and allocate adequate resources for rendering them effective in practice. Programmes for this purpose should include the promotion of public awareness; preparation and distribution of guidance material; and specialized training for public officials in charge of implementing laws and regulations, and for practitioners expected to represent citizens participating in the decision-making process.

(b) Provide legal reference and support services

19. Competent intergovernmental and non-governmental organizations should cooperate to provide Governments and legislators, especially of developing

countries, with an integrated programme of environment and development law (sustainable development law) services, carefully adapted to the specific requirements of the recipient legal and administrative systems. Past experience has demonstrated the usefulness of combining specialized legal information services with legal expert advice. Within the United Nations system, closer cooperation between all agencies concerned - including mutual access to country data and mission reports, common rosters of experts, and joint projects, where appropriate - would avoid duplication of databases and facilitate division of labour. In addition to legal advisory services provided upon request ad hoc, comprehensive inventories and reviews of selected national legal systems should be scheduled for at least 20 developing countries per year during the period 1993-2000.

(c) Establish a cooperative training network for sustainable development law

20. Competent international and academic institutions should cooperate to provide, especially for trainees from developing countries, coherent postgraduate programmes and in-service training facilities in environment and development law (sustainable development law). Such training should address both the effective application and the progressive improvement of applicable laws; the related skills of negotiating, drafting and mediation; and the training of trainers. Intergovernmental and non-governmental organizations already active in this field should cooperate with related university programmes to harmonize curriculum planning and to offer an optimal range of options to interested Governments and potential sponsors.

(d) Monitor national legal follow-up to international instruments

21. Governments, in consultation with the international secretariats concerned, should improve and harmonize practices and procedures for the domestic implementation of international agreements, including national reporting on legal and regulatory measures taken. Experience under several agreements indicates both a low degree of compliance with reporting requirements and inadequate follow-up evaluation, owing in part to staff constraints in the countries concerned. Sample surveys of domestic follow-up action should be undertaken, based on a comparison of actual legislative and regulatory enactments.

4. Means of implementation

(a) Financing and cost evaluation

22. Most of the programme activities could be carried out through organizations and institutions already active or competent in this field (the United Nations Environment Programme (UNEP), the United Nations Institute for Training and Research, the United Nations University, the Food and Agriculture Organization of the United Nations, the International Maritime Organization, the World Bank, the regional commissions, the World Conservation Union, the International Development Law Institute and several non-governmental academic or professional bodies), with appropriate additional funding:

(a) Additional technical cooperation costs for a projected series of 20 country missions per year (to prepare comprehensive inventories and reviews of national legal systems with regard to sustainable development), and for direct assistance to developing countries in national implementation of international instruments (including standard reporting practice and procedures), are estimated at $4 million;

(b) Additional support costs to international organizations and institutions (to provide, upon request and under preferential conditions, legal reference, advisory and training services to Governments of developing countries and economies in transition) are estimated at $2 million per year.

(b) Scientific and technological means

23. The programme relies essentially on a continuation of ongoing work for legal data collection, translation and assessment. Closer cooperation between existing databases may be expected to lead to better division of labour (e.g., in geographical coverage of national legislative gazettes and other reference sources) and to improved standardization and compatibility of data.

(c) Human resources development

24. Participation in the training network is expected to benefit an unspecified number of professionals from developing countries. Demand for this type of postgraduate and in-service training is known to be high. Generally, the development of effective and transparent legal procedures in this field will contribute to wider public participation in decision-making.

(d) Strengthen legal and institutional capacity

25. A major part of the programme should be oriented towards improving the legal-institutional capacities of developing countries and economies in transition to cope with national problems of governance and effective law-making and law-applying in the field of environment and sustainable development. Regional centres of excellence should be designated and supported to build up specialized databases and training facilities for linguistic/cultural groups of legal systems.

C. Making effective use of economic instruments and market incentives 11/

1. Basis for action

26. Environmental law and regulation is important, but it alone cannot be expected to deal with the problems of environment and development. Prices, markets and the structure of rewards and penalties inherent in governmental fiscal and economic policies also play a powerful rule in shaping attitudes and behaviour towards the environment.

27. During the past several years, many Governments, primarily in industrialized countries but also in Central and Eastern Europe and in developing countries, have been making increasing use of economic and market-oriented approaches consistent with the well-known "polluter-user pays" approach.

28. While economic and market-oriented approaches are not a panacea, they can substantially enhance capacity to deal with the issues of environment and development by developing cost-effective solutions, promoting technological innovation and influencing environmental behaviour, as well as providing an important source of funds that can be deployed to meet environment and development objectives.

29. What is needed is a concentrated effort to make more effective and widespread use of economic and market-oriented approaches within a broad framework of law and regulation, as part of a general transition towards economic and environmental policies that are supportive and mutually reinforcing.

2. Objectives

30. The challenge is to achieve significant progress in the years ahead in meeting three fundamental objectives:

(a) To internalize environmental costs in the decisions of producers and consumers, to reverse the tendency to treat the environment as a "free good" and to pass these costs on to other parts of society, other countries, or to future generations;

(b) To move towards more environmentally sound pricing, which reflects the costs associated with environmental degradation and the relative scarcity of resources;

(c) To use market principles in favour of, not against, the environment.

3. Activities

(a) Reorient governmental policies

31. In the near term, Governments should gradually build on experience with economic and market-oriented approaches by undertaking to review their policies in order to:

(a) Establish effective combinations of economic, regulatory and voluntary (self-regulatory) approaches;

(b) Remove or reduce subsidies that are environmentally unsound as well as uneconomic;

(c) Recast existing structures of incentives to meet sustainable development objectives;

(d) Explore the creation of new markets in the areas of pollution control and resource management;

(e) Move towards environmentally sound pricing.

32. In particular, they should determine how effective use can be made of economic and market-oriented approaches in the following areas:

(a) Sectoral issues related to energy, transportation, agriculture and forestry, water and wastes;

(b) Global and transboundary issues, especially those associated with atmospheric pollution;

(c) The development and introduction of more environmentally sound technology and its transfer to developing countries.

(b) Take account of the particular circumstances of developing countries and countries with economies in transition

33. A special effort should be made to develop applications for the use of economic and market-oriented approaches geared to the particular needs of developing countries and countries with economies in transition, with the assistance of regional and international economic and environmental organizations and private policy and research institutes, by:

(a) Assessing the scope for application of economic and market-oriented approaches to developing countries and countries with economies in transition;

(b) Encouraging regional seminars and, possibly, the development of regional centres of expertise.

(c) Create a global inventory of effective uses of economic instruments and market-oriented incentives

34. Recognizing that the use of economic instruments is still relatively recent, Governments should encourage the creation of a global inventory of effective uses of economic instruments and market-oriented incentives. This could serve as an ongoing database designed to assist policy makers and researchers in assessing these approaches.

(d) Increase understanding of the role of economic instruments and market-oriented approaches

35. Governments should also encourage research and analysis on effective uses of economic instruments and market-oriented approaches, with the assistance of regional and international economic and environmental organizations, as well as private policy and research institutes and academics, with a focus on such key issues as:

(a) The role of environmental taxation, including the scope for shifting taxation towards resource consumption and environmental degradation and away from income and labour, without necessarily adding to the total level of taxation;

(b) The implications of economic instruments and market-oriented approaches for competitiveness and international trade, and potential needs for future international coordination and harmonization;

(c) The possible social and distributive implications of using various instruments.

(e) Establish a process for focusing on pricing

36. The theoretical advantages of using pricing policies to address environment-related issues need to be accompanied by greater understanding of what it means to take significant steps in this direction. Processes should therefore be established at both the domestic and the international levels to examine:

(a) The practical implications of moving towards greater reliance on environmentally sound pricing to help achieve environment and development objectives;

(b) The implications for resource pricing in the case of resource-exporting countries, particularly developing countries;

(c) The methodologies involved in valuing environmental costs.

(f) Enhance understanding of environmental economics

37. Increased interest in economic instruments and market-oriented approaches also requires a concerted effort to improve understanding of environmental economics by:

(a) Encouraging institutions of higher learning to review their curricula and strengthen studies in environmental economics;

(b) Encouraging regional and international economic organizations and private research and policy institutes with expertise in this area to provide training sessions and seminars for government officials.

4. Means of implementation

38. This programme involves reorientation of policies on the part of Governments. It also involves international and regional economic and environmental organizations and agencies with expertise in this area (primarily the Organisation for Economic Cooperation and Development, the Economic Commission for Europe, the World Bank and the Asian Development Bank,

and recently the United Nations Conference on Trade and Development) and industry.

Financing and cost evaluation

39. Any additional costs associated with implementing these activities should be minimal, in the range of not more than $5 million annually, associated with the creation of a global inventory and regional seminars. Any costs are far outweighed by the potential for additional financial resources arising from increased reliance on economic instruments and market incentives.

D. Establishing systems for integrated environmental and economic accounting

1. Basis for action

40. Sustainable development policies should foster changes in the pattern of production and consumption and promote significant shifts in technology use and macro- and micro-economic management. Moreover, environmental policies should shift from a post-factum approach to an anticipatory approach in addressing the sources of environmental depletion and irreversible degradation. A first step towards the integration of sustainability into macroeconomic management should be to establish better measurement of how the environment plays a crucial role as a source of natural capital and as a sink for by-products generated during the production of man-made capital. 12/

41. A programme to establish national systems of integrated environmental and economic accounting (IEEA) in all countries is proposed in this document. The programme requires some additional international funding, although it necessarily relies heavily on national expertise and existing systems of economic and environmental data. 13/

2. Objectives

42. The main objective is to expand existing systems of national economic accounts into systems of integrated environmental and economic accounting in all member States by the end of this century. These should play an integral part in the national development decision-making process and should be based in the agency dealing with national accounts and operated in close collaboration with national environmental statistics and geographic departments.

3. Activities

(a) Strengthen international cooperation

43. The Statistical Office of the Secretariat should:

(a) Make available to all member States the methodologies contained in the SNA Handbook on Integrated Environmental and Economic Accounting;

(b) Aim at further standardization of the provisional concepts and methods proposed in the SNA Handbook;

(c) Coordinate the training of national accountants, environmental statisticians and national technical staff in small groups for the establishment, adaptation and development of national IEEAs.

44. The Department of International Economic and Social Affairs of the Secretariat, in close collaboration with the United Nations Development Programme (UNDP) and UNEP, should:

(a) Support, in all member States, the utilization of sustainable income indicators in national economic and social planning practices, ensuring that IEEAs are usefully integrated in economic development planning at the national level;

(b) Promote improved environmental and economic data collection.

(b) Strengthen national accounting systems

45. At the national level, the programme should be adopted mainly by the agencies dealing with national accounts, in close cooperation with environmental statistics departments, and aim at being useful for decision makers in charge of national economic planning. National institutions should play a crucial role not only as the depository of the system but also in its adaptation, establishment and continuous use.

(c) Establish a review process

46. At the international level, a permanent review process should be established by the Statistical Commission to advise member States on technical and methodological issues related to the further development and implementation of IEEAs in member States.

(d) Strengthen data and information collection

47. National Governments should implement a major enhancement in data collection to set in place national IEEAs with a view to contributing pragmatically to sound macroeconomic management. Major efforts should be made to augment the capacity to collect and analyse environmental data and information and to integrate it with economic data. International donor

agencies should finance the development of intersectoral data banks to ensure that national planning for sustainable development is based on precise, reliable and effective information.

(e) Strengthen technical cooperation

48. The Statistical Office, in close collaboration with UNDP and UNEP, should strengthen mechanisms for technical cooperation among developing and developed countries. This should also include exchange of experience in the establishment of IEEAs, particularly in connection with the valuation of non-marketed natural resources and standardization in data collection. 14/

4. Means of implementation

(a) Financing and cost evaluation

49. Financing will have to be increased, particularly for activities connected with environmental data-gathering and assessment at both the national and the international levels. Based on the experience and estimates of the Statistical Office, the establishment of IEEAs requires some additional international funding. However, the costs can be significantly higher if countries do not have reasonably developed national statistical systems. Cost estimates assume that national counterparts play an instrumental role in the process and that contributions in terms of human resources and infrastructure are readily available in the country. Approximately US$ 2 million per year in external costs will be needed.

(b) Strengthen institutions

50. To ensure the application of IEEA:

(a) National institutions in developing countries should be strengthened to ensure the effective integration of environment and development at the planning and decision-making levels; 15/

(b) The Statistical Office should provide the necessary technical support to member States, in close collaboration with the review process to be established by the Statistical Commission. The Statistical Office should coordinate international aid for establishing IEEAs and the provision of technical cooperation, in collaboration with UNDP and UNEP.

(c) Enhance use of information technology

51. Guidelines and mechanisms should be developed for the transfer of information technologies to developing countries. State-of-the-art data management technologies should be adopted for the most efficient and widespread use of IEEAs.

(d) Strengthen national capacity

52. Governments, with the support of the international community, should strengthen national institutional capacity to collect, store, organize, assess and use data in decision-making. Training in all areas related to the establishment of IEEAs, and at all levels, will be required, especially in developing countries. This should include technical training of those involved in economic and environmental analysis, data collection and national accounting, as well as training decision makers to use such information in a pragmatic way.

Notes

1/ The issues dealt with here are directly related to sect. IV, chap. 9, "Providing data and information for sustainable development", and sect. IV, chap. 5, "National mechanisms and international cooperation for capacity-building in developing countries". In addition, there are areas of convergence with sect. II, chap. 2, "Integrated approach to planning and management of land resources"; some of the issues have already been examined in the context of land resources in document A/CONF.151/PC/63.

2/ Achieving this will be difficult, not so much technically, but because it will demand changes in perceptions and attitudes. To a great extent, these changes will depend on leadership and support at the most senior levels of Government. It should be understood that policy integration, and setting in place central policy objectives and guidance, does not imply greater centralization and control. On the contrary, the object is to set in place a system that regulates itself internally by relying on full participation of all groups of society in decisions and delegating responsibility to the lowest level appropriate to each function.

3/ The United Nations system has been steadily building up its capacity to deal with environment and development in an integrated manner. However, there is a need for further strengthening of capacity, and better coordination, as well as for more human and financial resources. Much work still needs to be done if environment is to be placed at the centre of economic decision-making. UNEP, and increasingly UNDP and the World Bank, have expertise in the more general policy areas dealt with here.

4/ See sect. IV, chap. 5, "National mechanisms and international cooperation for capacity-building in developing countries".

5/ See chapters in section III concerning strengthening the roles of major groups.

6/ See sect. IV, chap. 9, "Providing data and information for sustainable development".

Notes (continued)

7/ Although the details of specific legal, economic and accounting instruments are addressed in separate programmes presented subsequently, their integration in the overall planning and management process is essential.

8/ See sect. IV, chap. 3, "Science for sustainable development".

9/ See sect. IV, chap. 4, "Promotion of education, training and public awareness".

10/ The programme on legal and regulatory frameworks (sect. I, chap. 7.B). While focusing on national and local law-making and implementation, is closely related to international legal instruments and mechanisms in sect. IV, chap. 8, especially with regard to the domestic implementation of international agreements, and with regard to integrating training and capacity-building activities.

11/ This programme should be considered in conjunction with document A/CONF.151/PC/50, and the matrix on current uses of economic instruments, which has been prepared as a separate paper in response to the interest expressed by participants at the third session of the Preparatory Committee, drawing on information contained in the Conference's national reports. The programme addresses the broad question of how more widespread and effective use can be made of economic instruments and market-oriented incentives; specific proposals are also contained in sect. I, chap. 3, "Changing consumption patterns", sect. II, chap. 1, "Protecting the atmosphere", sect. II, chap. 3, "Combating deforestation", sect. II, chap. 6, "Promoting sustainable agriculture and rural development", sect. II, chaps. 11-14, concerning wastes, and sect. IV, chap. 2, "Transfer of environmentally sound technology".

12/ Document A/CONF.151/PC/49, endorsed by the Preparatory Committee at its third session, describes in some detail the relatively prudent approach taken by the Statistical Office of the Secretariat in elaborating a "satellite" or complementary system to conventional national accounts. Such a system builds as much as possible on the concepts, classifications and accounting identities of conventional accounts. It also focuses on the immediate interactions between the economic system and the environment in terms of natural resource inputs and "joint" outputs of wastes and pollutants. This makes it possible to account for environmental costs and benefits where they are generated - a first step towards "accountability" and the application of economic instruments. To date, various components of this system have been successfully tested in pilot projects in Mexico and Papua New Guinea. The Statistical Office has prepared a Handbook on Integrated Environmental and Economic Accounting, which discusses the methodologies adopted in developing the system and also serves as a practical guide for those countries interested in establishing their own systems. (The draft Handbook is available in the Statistical Office to all Member States upon request.)

Notes (continued)

13/ The IEEA programme should be considered together with other programmes in Agenda 21, such as sect. IV, chap. 9, "Providing data and information for sustainable development", with its emphasis on data collection and enhanced data management.

14/ It is necessary to emphasize that the primary purpose for the establishment of more "accurate" national accounting procedures is to improve domestic macroeconomic management. The IEEAs should not be used only to compare the performance of world economies.

15/ These efforts should play an integral part in the monitoring of the process of sustainable development, as proposed in sect. IV, chap. 9, "Providing data and information for sustainable development".